Name: _____ Class: _____ Date: _____

SBAC Practice Problems

1. Enter the value of $\frac{3}{4} + \frac{7}{12} - (-4)$.

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2. Mark buys a wooden board that is $7\frac{1}{2}$ feet long. The cost of the wooden board is \$0.50 per foot, including tax.

Enter the total cost, in dollars, of the wooden board.

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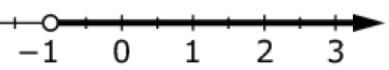
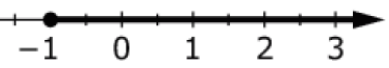
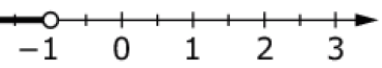
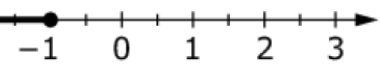
3. Which number line shows the solution to the inequality $-3x - 5 < -2$?

Ⓐ 

Ⓑ 

Ⓒ 

Ⓓ 

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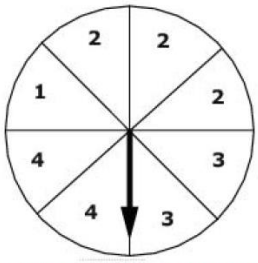
4. The spinner has 8 equal-sized sections, each labeled 1, 2, 3, or 4.
The arrow on the spinner is spun.



What is the probability of the arrow stopping on a section labeled with a 2?

Ⓐ $\frac{1}{4}$

Ⓑ $\frac{1}{8}$

Ⓒ $\frac{3}{8}$

5. $2.3 \bullet (4 + 12)$

6. Enter the value of p so the expression $\frac{5}{6} - \frac{1}{3}n$ is equivalent to $p(5 - 2n)$.

7. A representative sample of 50 students from a high school is surveyed. Each student is asked what science class he or she is taking.

This table shows the responses.

Science Class	Number of Students
Physics	6
Chemistry	10
Biology	18
Earth Science	4
Health Science	12

Select **all** of the statements that are valid based on the survey results.

- ☐ About 20% of students at the high school are taking Chemistry.
- ☐ About twice as many students are taking Health Science than are taking Physics.
- ☐ For every 150 students we could predict that at least 18 of the students are taking Physics.
- ☐ For every 25 students we could predict that at least 4 of the students are taking Earth Science.

8. **1889**

In the given equation, a, b, and c are nonzero rational numbers.

$$a \bullet b = c$$

Given this equation, drag one number into each box to complete four true equations.

a
b
c
$-a$
$-b$
$-c$

Delete

$-a \bullet \square = c$

$\square \bullet \square = -c$

$\frac{\square}{-b} = a$

$\frac{\square}{\square} = -a$

9.

George earns $455 per week. George receives a 20% raise.

How can George calculate his new weekly pay rate?

Select **all** calculations that will result in George's new weekly pay rate.

- ☐ divide $455 by 0.20
- ☐ divide $455 by 1.20
- ☐ multiply $455 by 0.20
- ☐ multiply $455 by 1.20
- ☐ solve for x: $\frac{x}{455} = \frac{120}{100}$
- ☐ solve for x: $\frac{455}{x} = \frac{20}{100}$

10.

1877

Alex claims that when $\frac{1}{4}$ is divided by a fraction, the result will be greater than $\frac{1}{4}$.

To convince Alex that this statement is only sometimes true:

Part A: Drag one digit into each box to create an expression that is greater than $\frac{1}{4}$.

Part B: Drag one digit into each box to create an expression that is **not** greater than $\frac{1}{4}$.

1 2 3 4 5 6 7 8 9

Delete

Part A: **Expression greater than $\frac{1}{4}$**

$$\frac{1}{4} \div \frac{\square}{\square}$$

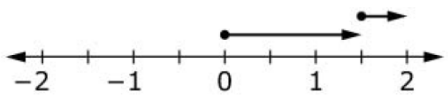
Part B: **Expression not greater than $\frac{1}{4}$**

$$\frac{1}{4} \div \frac{\square}{\square}$$

11.

Which number line model represents the sum of $1\frac{1}{2} + (-\frac{1}{2})$?

Ⓐ



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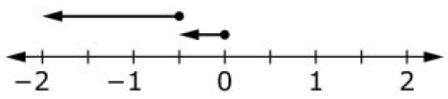

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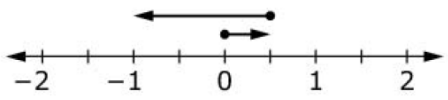

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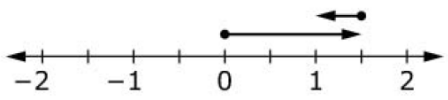


12. Which expression is equivalent to $-8(10x - 3)$?

Ⓐ $-80x + 24$

Ⓑ $-80x - 24$

Ⓒ $-80x - 3$

Ⓓ $-80x + 3$

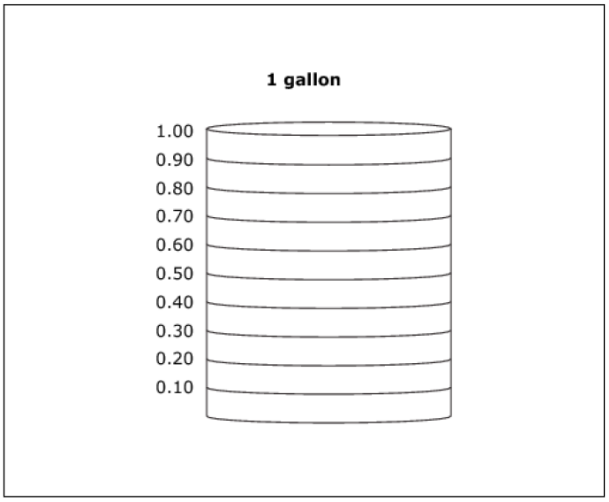
13. **1876**

Tim makes 80 gallons of paint by mixing 48 gallons of gray paint with 32 gallons of white paint.

What part of every gallon is gray paint?

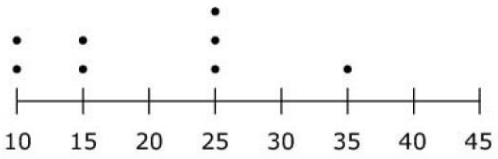
The model represents 1 gallon of mixed paint.

Select the bars to show how much of the gallon is gray paint.

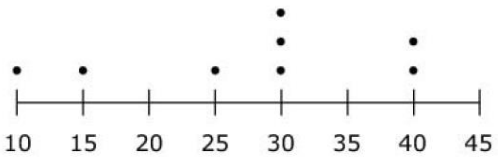


14. Mr. Anthony wants to know how some student athletes are improving in the number of push-ups they can do.

These dot plots show the number of push-ups each student was able to do last month and this month.



Number of Push-ups Last Month



Number of Push-ups This Month

What is the increase in the mean number of push-ups from last month to this month?

15. Enter the value of n so the expression $(-y + 5.3) + (7.2y - 9)$ is equivalent to $6.2y + n$.

16.

This table shows a proportional relationship between x and y.

x	y
4	48
5	60
8	96

Find the constant of proportionality (r).

Using the value for r, enter an equation in the form of $y = rx$.

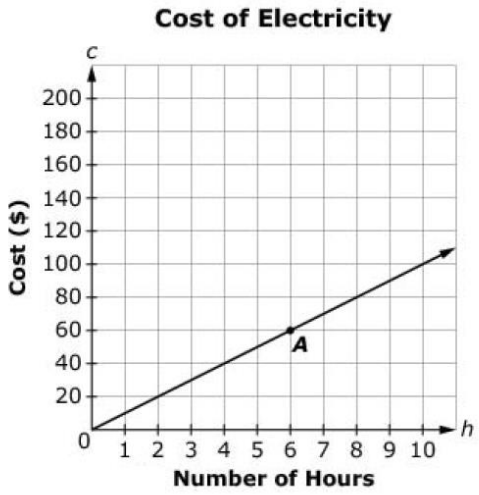
17.

Dave buys a baseball for $15 plus an 8% tax. Mel buys a football for $20 plus an 8% tax.

Enter the difference, in dollars, of the amounts Dave and Mel pay, including tax. Round your answer to the nearest cent.

18.

This graph shows a proportional relationship between the number of hours (h) a business operates and the total cost (c) of electricity.



Select True or False for each statement about the graph.

	True	False
Point A represents the total cost of electricity when operating the business for 6 hours.	☐	☐
The total cost of electricity is $8 when operating the business for 80 hours.	☐	☐
The total cost of electricity is $10 when operating the business for 1 hour.	☐	☐

19.

Determine whether each statement is true for all cases, true for some cases, or not true for any case.

	True for all cases	True for some cases	Not true for any cases
Two vertical angles form a linear pair.	☐	☐	☐
If two angles are supplementary and congruent, then they are right angles.	☐	☐	☐
The sum of two adjacent angles is 90°.	☐	☐	☐
The measure of an exterior angle of a triangle is greater than every interior angle of the triangle.	☐	☐	☐

20.

The entry fee to the fair is $4.00. Each ride requires a ticket that costs $0.50. Heidi spent a total of $12.00.

How many tickets did Heidi purchase?

Ⓐ 6

Ⓑ 16

Ⓒ 24

Ⓓ 32

21.

1878

Shelly incorrectly solves the equation $\frac{1}{2}(c + 6) = 7$. Her work is shown.

Part A:

Select **all** the steps that show an error based on the equation in the previous step.

Part B:

Use the Add Point tool to show the correct solution of the given equation.

Part A:

$\frac{1}{2}(c + 6) = 7$

Step 1: $\frac{1}{2}c + 6 = 7$

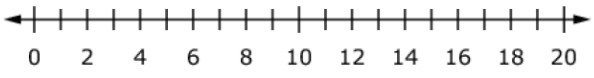
Step 2: $\frac{1}{2}c = 7 + 6$

Step 3: $\frac{1}{2}c = 13$

Step 4: $c = 13 \div 2$

Step 5: $c = 6\frac{1}{2}$

Part B: **Correct solution**



22.

David uses $\frac{1}{2}$ cup of apple juice for every $\frac{1}{4}$ cup of cranberry juice to make a fruit drink.

Enter the number of cups of apple juice David uses for 1 cup of cranberry juice.

23.

A store is having a sale. Each customer receives either a 15% discount on purchases under $100 or a 20% discount on purchases of $100 or more. Kelly is purchasing some clothes for $96.60 before the discount. She decides to buy the fewest packs of gum that will increase her purchase to over $100. The price of each pack of gum is $0.79.

After the discount, how much less will Kelly pay by purchasing the clothes and the gum instead of purchasing only the clothes? (Assume there is no sales tax to consider.)

Ⓐ $1.05

Ⓑ $1.67

Ⓒ $3.69

Ⓓ $3.87

24.

Aimee has $10.00 to spend on school supplies. The following table shows the price of each item in the school store. No sales tax is charged on these items.

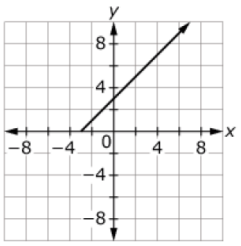
Item	Price
Eraser	$0.89
Folder	$1.29
Notebook	$2.35
Pen	$0.70

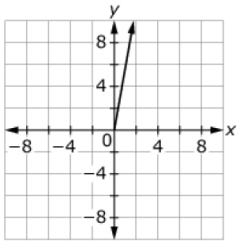
Determine if Aimee can buy the combination of items with her $10.00. Select Yes or No for each combination of items.

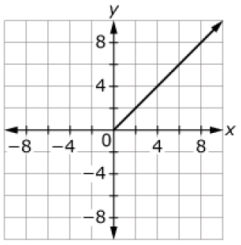
	Yes	No
5 folders and 5 pens	☐	☐
6 pens and 6 erasers	☐	☐
1 pen and 4 notebooks	☐	☐
3 folders and 7 erasers	☐	☐

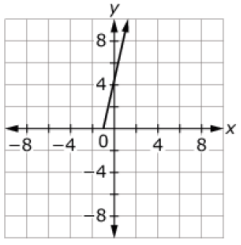
25.

Select **all** the graphs that show a proportional relationship between x and y.

☐ 

☐ 

☐ 

☐ 

A scale factor of 3.5 maps Figure A onto Figure B.

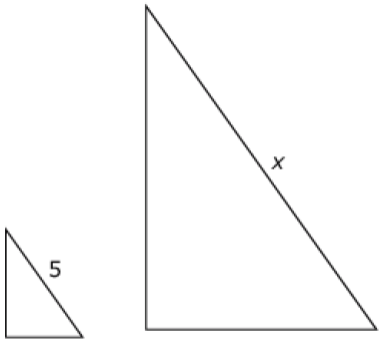
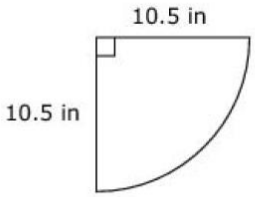


Figure A Figure B

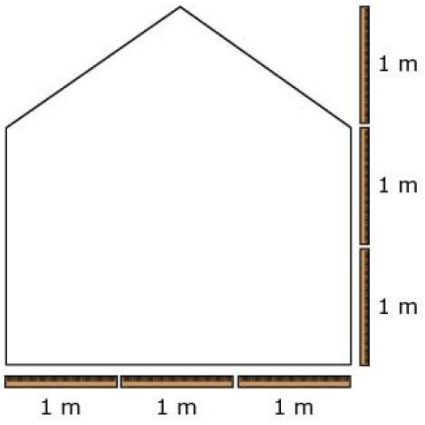
26. Enter the value of x.

A corner shelf is $\frac{1}{4}$ of a circle and has a radius of 10.5 inches.



27. Enter the area of the shelf, in square inches. Round your answer to the nearest hundredth.

John needs to paint one wall in his school. He knows that 1 can of paint covers an area of 24 square feet. John uses a meter stick to measure the dimensions of the wall as shown.



[1 meter = approximately 39 inches]

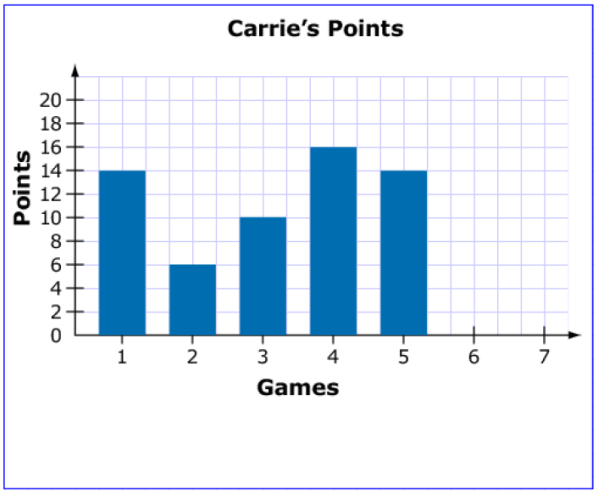
28. What is the **fewest** number of cans of paint John can use to paint the wall?

1982

Carrie's basketball team has played 5 games. The number of points Carrie scored in each game is shown in the bar graph.

Determine possible point totals for games 6 and 7 so that the range of the data set increases, but the mean and median stay the same.

Select point totals above the labels 6 and 7 to complete the bar graph.



29.

30.